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DISEASES OF THE NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

CONTENTS:

PSYCHOTHERAPY OF ULCERATIVE COLITIS 149
Lincoln D. Clark

PEGANONE, A NEW ANTIEPILEPTIC DRUG 155
E. D. Schwade, R. K. Richards and G. M. Everett

RELATION OF CHLORPROMAZINE TO EPILEPSY 159
A. F. Meszaros and P. O. O'Reilly

RAYNAUD'S DISEASE STUDIED BY HYPNOSIS 163
Albert Norris and Paul Huston

PSYCHOSIS ASSOCIATED WITH CHILD BEARING 166
J. D. Combs

OBSERVATIONS ON CONVULSIVE AND SUBCONVULSIVE ELECTROTHERAPY DURING INTRAVENOUS ANESTHESIA 169
Clarence W. Olsen

BOOK REVIEWS 171

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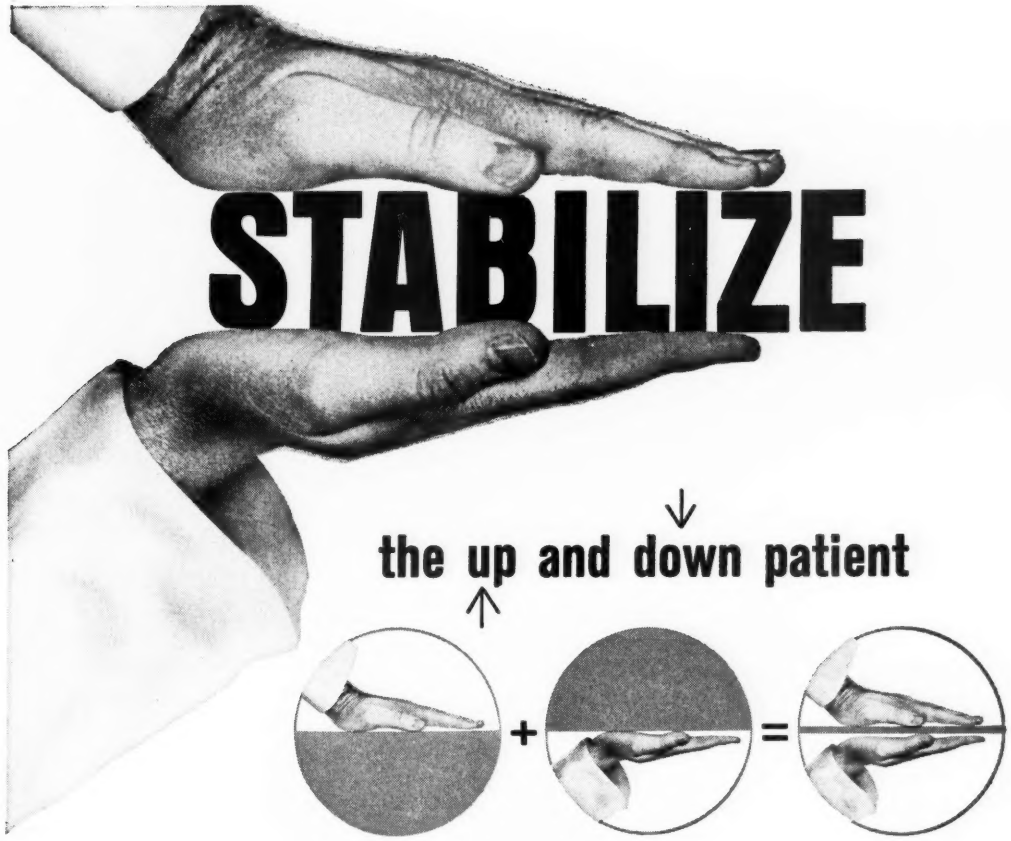

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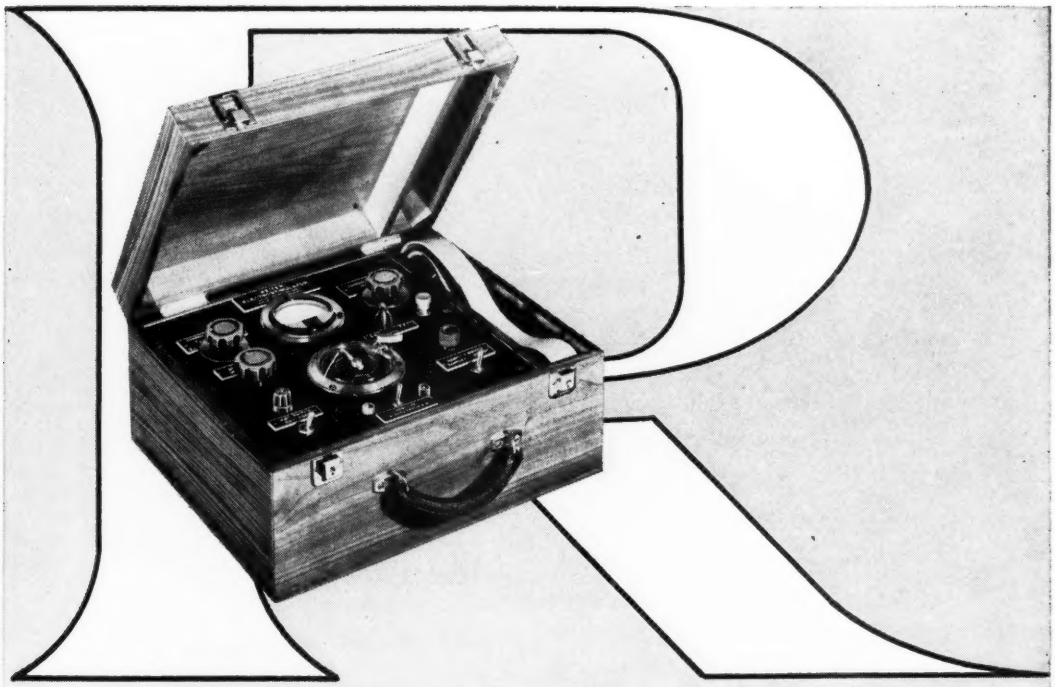

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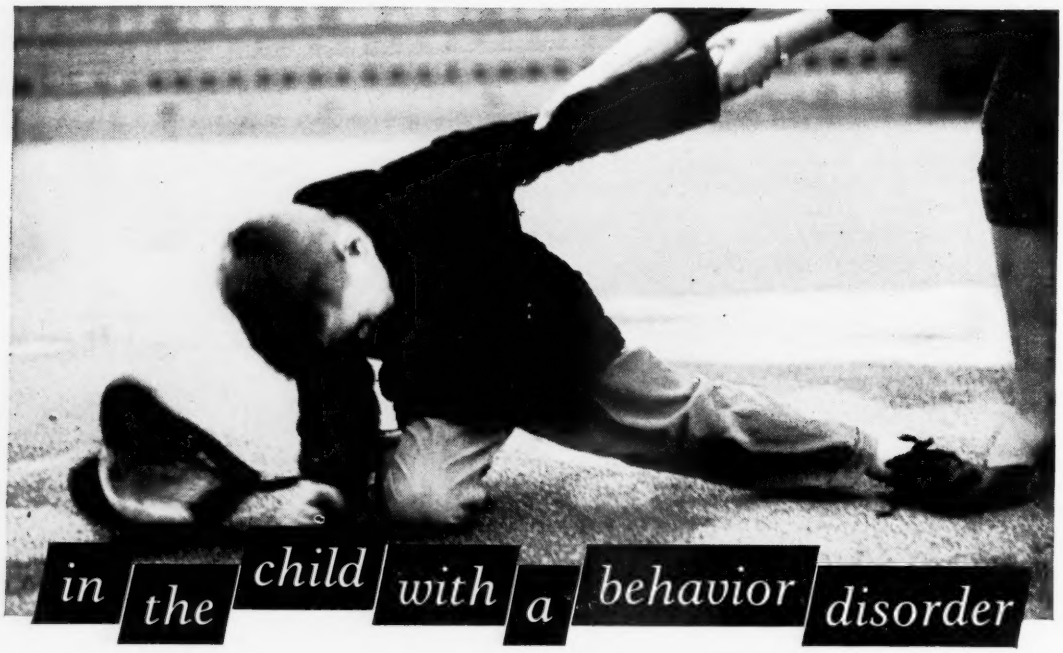

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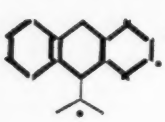

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DISEASES *of the* Nervous System

Psychotherapy of Ulcerative Colitis

LINCOLN D. CLARK, M.D.
Salt Lake City, Utah

Introduction

An excellent review of ulcerative colitis in its clinical, pathological and psychosomatic aspects has recently been carried out by Engel.[1,2,3] Lindemann's psychological formulations of this illness[4,5,6,7] have been briefly reviewed in one of Engel's articles.[3] The purpose of this paper is to discuss and illustrate this latter contribution, with emphasis upon its therapeutic application. It is felt that it is a therapeutic approach deserving emphasis because it can be easily taught as a method and is, in terms of technique, well adapted to the special difficulties and hazards which may arise in such efforts.

Discussion

Psychotherapy in patients with a serious, potentially fatal disease such as ulcerative colitis involves a number of special problems. First, the stakes are high. An unfavorable outcome, at best, means increased invalidism; at worst, obligatory ileostomy or even death. This is an ominous reality problem for the patient and a potential source of anxiety for the therapist, realizing that his efforts may have untoward, as well as favorable effects upon the course of the disease. Secondly, psychiatric treatment of these patients involves radical departure from the structured interview techniques with which most psychiatrists are familiar. These techniques, developed primarily for treatment of neurotic disorders, define the role and obligations of the therapist and limit the anticipations of the patient in this regard. In contrast, in treating ulcerative colitis, both the disease itself and the psychological experiences involved in therapy necessitate greater latitude in the therapeutic relationship. For example, during an acute phase of the illness, the therapist may have to visit at the bedside of the patient, be generous in his availability, concede to his demands, and in general "give" much more in a personal sense than in treating psychoneurosis.

There is an obvious need for a conceptual scheme in accordance with which therapy can be conducted. A number of these have been suggested and given trial. If a psychotherapeutic approach to ulcerative colitis is to be of practical value, it should fulfill several requirements: 1. It should be so designed that it dovetails into a total plan for care of the patient, taking into account the fact that these patients must be under medical surveillance and that in the event of complications, such as perforation or rapid physical deterioration, an abrupt shift in responsibility may be necessary. In the case to be discussed, this was done by the collaboration of an internist who had full responsibility for the medical care of the patient, i.e., prescribing diet, drugs, limitations of activity, and, should the need have arisen, defining the point at which surgical intervention was indicated. The psychotherapist is not primarily involved in this aspect of the patient's care. 2. The therapeutic technique should be such that it can be learned and carried out by psychiatrists of ordinary skill, within the limitations of the average psychiatric or medical service. This implies in turn that permissiveness in regard to regressive behavior and acting out be confined within the anxiety tolerance of the therapist and supporting personnel. Otherwise, there is a risk of overt or unconscious hostility vitiating the intended therapeutic relationship. 3. The conduct of therapy should be based on a frame of reference which enables the therapist to anticipate, at least in part, the evolution and meaning of the shared experience involved and at any given point to

From College of Medicine, University of Utah and Veterans Administration Hospital, Fort Douglas Division, Salt Lake City, Utah.

structure his role appropriately. For example, recognizing that "giving" on the part of the therapist has practical limits, one should be able to define one's role in terms maximally meaningful to the patient. 4. The role of the therapist should be such that while giving support in the acute phase of the illness it affords a prototype for "the establishment of more protracted legitimate forms of dependent interaction"[5] after recovery.

Lindemann, as well as others, has pointed out the frequency with which the onset or an exacerbation of ulcerative colitis is related to loss of a critical human relationship by death, disillusionment, rejection, or obligatory separation. The lost relationship is one upon which the patient has been dependent for emotional security and for satisfying patterns of interaction with other individuals. The personality of these patients is marked by a poverty of comfortable human relationships, limited social skills for the acquisition of new relationships, impoverishment in their defenses against anxiety (such as are utilized by both "neurotic" and "normal" individuals), and a need for considerable, usually poorly organized, physical activity. The latter probably represents a primitive effort to control anxiety.

The special vulnerability of these individuals to bereavement appears to lie in the nature of the ruptured relationship. The latter might be described as an infantile form of identification. Such an identification can be imagined in the first year of life. This primary phase of ego development occurs in relationship to the mother or maternal substitute. Through this experience with the constantly-accessible mother repetitively gratifying his instinctive needs and relieving his distress, the infant creates a group of anticipations in regard to the maternal figure. This relationship exists exclusively with the maternal figure and is obviously one of almost total dependency. The repetitive fulfillment of his anticipations can be regarded as one of the necessary conditions for his gradually increasing capacity to defer gratification. At the same time, there is increasing definition of his own body image. The infant eventually becomes aware of nonmaternal figures in his environment, toward whom he must modify his anticipations. These others are less accessible, may not feed him, and in general play a more limited role. Yet certain anticipations carry over to these individuals from his original experience with mother. These are vague feelings that others are like himself, can sympathize with his needs (yet not immediately gratify them), and will not, without provocation, do him harm. These limited anticipations are of course part of an adult's basic assumptions about other people.

With increasing ego development and autonomy, the child's exclusive identification with parental figures is gradually replaced by a series of identifications with other individuals whose role is meaningful to the child. These identifications are multiple, serve varied functions, are less intense, and if the need arises can be reduplicated or replaced. In the ulcerative colitis patient, despite the fact that he may function relatively well in other area of his personality, there appears to be a defect in this developmental sequence. His critical identifications retain many qualities of the prototype child-mother experience.

A variety of circumstances can be imagined which might lead to this disturbance in ego development. For example, absence or inaccessibility of parental figures, or feelings of rejection on their part, during the child's period of total dependency could impair development of that group of anticipations about other individuals which enable the child to relate to them with security and affection. The psychological defect in certain cases of ulcerative colitis can be regarded as a persistence or compulsive seeking of an infantile type of identification. Implicit in this process is a willingness to delegate important ego functions to the critical figure with whom the patient is identified. He depends upon this figure, even in adult life, to lead him to important gratifications and comfortable relationships with others. Ordinarily, of course, the capacity for achieving these rewards is an integral part of one's ego function.

The emotional sequel to interruption by death of such an infantile relationship has been vividly described by Lindemann.[5] He observed that there was a sense of emptiness for memories, anticipations, or future plans,

coupled with feelings of unreality and loss of identity. The patient had feelings of being another person who resembled both her deceased father and herself. At other times, depressive feelings may be combined with infantile, revengeful fantasies and behavior may be marked by aggressiveness, extravagant demands, and repetitive testing of the good will of those caring for the patient. The latter behavior is a plaintive attempt to re-experience the lost dependency. The patient's doubting, distrust, and need to "test" suggest a lack of some of the basic anticipations about other human beings which have been previously described.

In most cases, review of the circumstances surrounding the onset of the disease will reveal the occurrence of a ruptured human relationship and even afford clues as to the emotional meaning of this experience. However, in others, as might be anticipated, it may be difficult during initial contacts with the patient to identify a discrete precipitating event or the emotional context in which the disease took origin. On the one hand, the patient may repress or deny the full significance of his loss. At other times, the critical relationship may have been but precariously maintained for some time and its ultimate breakdown marked by an event which the therapist may at first regard as trivial. If a substitute identification with another individual or group is available at the time of the crisis in human relationships, the onset of the disease may be deferred or its course modified during the availability of that substitute experience. These latter points will be illustrated by the case to be presented in this paper.

The initial phase of treating ulcerative colitis, i.e. during the active stages of the disease, might be defined as "psychological replacement" therapy. This involves a definition of the patient's emotional needs. As is suggested above, these may become immediately apparent or may have to be more intuitively determined from the patient's emotional concerns, his demands in the therapeutic relationship, and his response to the role played by the therapist. This role is so designed as to be meaningful in terms of the ruptured relationship and replace critical features of the previous experience.

Lindemann has summarized this approach as follows.

"The technique of psychologic management must avoid the traditional methods of psychoanalytic inquiry. The contact must be brief, not permitting the development of regressive tendencies, hostile feelings, or affectionate attachment. The relationship must, rather, be an identifying one, in which the patient copies behavior patterns from the psychiatrist and makes use of them in the same manner as he previously did with the patterns of the person whom he has lost. If this difficult problem is solved, the patient usually goes through a period of imitating the psychiatrist in his relationship to other patients in the ward and of idealizing the psychiatrist, attributing to him an inordinate status in the hospital and testing out his availability and willingness as a source of new patterns of conduct. After such a relationship is established, it is often possible to review the bereavement with the proper emotions of depression and sorrow."[4]

During this phase of therapy, in which an exclusive identification is recreated, the patient remains as vulnerable as ever to separation. Any threat to this relationship may produce a return to emotional isolation and a relapse in his somatic illness. A number of factors are involved in the transition to a more stable level of adjustment. The working through of the bereavement has already been mentioned. Beyond this resolution of old resentments and sorrow, a maturative experience is involved in the new relationship. The latter, while it offers *pro tempore* a model for interpersonal behavior, planned activities, and problem solving, limits the infantile anticipations of the patient and demonstrates the separability of these aspects of dependency. The patient is then, with his new emotional security and his temporarily "borrowed" identity and social skills, able to reach out to establish new relationships. The way is opened to the multiple, partial identifications which underlie more mature and less vulnerable human relationships.

It is not felt that this therapeutic process can be accomplished in every case. For example, it may not be possible to establish the initial identifying relationship because the psychological needs of the patient, left ungratified by his loss, may be so infantile and represent such an extravagant delegation of ego functions that the therapist cannot feasibly adapt his role to fulfill them.

Accordingly it becomes important to attempt, relatively early in therapy, to define the specific character and extent of these needs. Within this frame of reference the therapist must then analyze his feelings to determine whether or not his own personality and role-taking resources can offer these critical components to the intended relationship. The realistic and emotional limitations of the therapist's role deserve strong emphasis. If the therapist is too much "out-of-character" (i.e. his own character), if he attempts to simulate affection, or adopts activities or attitudes which unconsciously depreciate the patient, he will probably be unsuccessful. The therapist must understand the patient and be comfortable in his role. It is probably preferable, from the standpoint of the patient's well-being never to initiate this relationship at all than partially to create it and then be obliged to withdraw. Premature termination of the relationship may involve for the patient a re-experiencing of his previous traumatic separation and precipitate a relapse in his illness.

There is one risk of depreciating the patient, semantic in its origin, which deserves specific mention. The word "infantile" has been used at several points in this paper. It is used descriptively, for lack of a better word, as are such terms in common psychiatric usage as "primitive," "immature," etc., to characterize certain psychological phenomena in adults. Their derivative, restricted meaning can be readily lost by contamination from their common usage. "Infantile" can become "babyish" and "infantile" needs may be envisaged as gratified by "babying" the patient or encouraging others to do so. "Babying" in a literal sense, with all the attitudes and accoutrements of the nursery, has in fact been suggested as therapy in ulcerative colitis. It is conceivable that rare psychiatrists or supporting personnel could with emotional conviction carry out such a "mothering" role. More likely, however, such efforts would become a caricature of such a role, which would only succeed in bewildering the patient. Although it may appear obvious, one must bear in mind that one is dealing with an adult who has already participated in a wide variety of meaningful human relationships, that he is an "adult" in most senses of the word, and that his vulnerability, however critical, is in a specific phase of his whole personality.

Case History

The patient, a 17 year old boy, was first admitted to our hospital in March, 1950. In January 1949, he had developed diarrhea, crampy lower abdominal pain, fever, weakness, anorexia, and weight loss. A barium enema revealed ulcerations of the sigmoid and marked irritability of the transverse colon. By sigmoidoscopy, several discrete ulcerations were visualized in the recto-sigmoid area. There was no evidence of amoebiasis. A diagnosis of idiopathic ulcerative colitis was made.

His disease followed an intermittent course. Partial remissions followed two hospitalizations during which he was treated with bed rest, sulfadiazine, high protein diet, blood transfusions, and anti-spasmodics. However, relapse occurred soon after returning home on each occasion. During this time, there was gradual extension of the disease process. By March, 1950, shortly before admission, there were x-ray signs of involvement of the ascending, transverse, descending, and sigmoid colon. For several months, he had run a down-hill course, with severe diarrhea, anorexia, and weight loss. He was referred with a recommendation of ileostomy and colectomy. His previous medical history was not remarkable except for the usual childhood diseases and bed-wetting until age 10. The case record described him as a chronically tense, fidgety, physically overactive boy, who at times exhibited slight facial tics.

The patient's parents were interviewed shortly after admission. It was immediately evident that there was a good deal of discord between them. Father, aged 42, was a retail merchant, who resented the fact that he came from a lower social and economic class than his wife. He owed his business to the generosity of his wife's brothers. She constantly reminded him of this dubious good fortune. He readily admitted that his relationship with his wife was "only fair," and that he escaped from her carping by remaining long hours at his work. He denied any detailed konwledge of his son's illness, interests, or problems, except to comment that his wife constantly nagged and criticized the patient over trivial matters and that he, in turn, deliberately aggravated his mother. Father added that at one point she had appeared at his shop in a state of desperation to say that "either he (the patient) goes or I go to a psychiatrist."

Mother, aged 40, was an obese, excitable, argumentative woman. When asked about her son's temperament, she repeatedly asserted that he "was no different than others." However, she then admitted that she was constantly irritated by his fidgetiness and nervous mannerisms, wondering if he did not "put them on" deliberately to irk her. She compared him unfavorably with his two brothers, age 6 and 11.

The patient was a tall, undernourished boy, who was obviously restless and tense but denied feeling in any way uncomfortable. He weighed 137 pounds. There was a mild acne vulgaris of the face. He stuttered slightly and showed occasional tics of his facial musculature.

It was decided that he should be continued on a conservative medical program of anti-spasmodics, sulfadiazine, high-protein, low roughage diet, but with ambulation as desired, and that an attempt should be made to see if psychotherapy might alter the course of his disease. He was admitted to the Psychiatric Service in April, 1950, where he remained for two months. During this time, he was not seen on any regular schedule. Instead he was seen several times each day for intervals of 15 minutes to one-half hour. Emphasis was placed upon the therapist's availability. At times, particularly when sharing activities, as much as 3-4 hours a day were spent with him.

The patient at first wandered rather aimlessly about the ward, seemingly at a loss as to how to approach other patients or the staff. Within a few days, he developed an arrogant, domineering manner, making peevish complaints about the hospital food, noisiness of the ward, and objectionable qualities of his fellow patients. He soon succeeded in alienating many of them. He cooperated poorly with ward routine—refused to have his temperature taken, his medicine given to him, and finally challenged a nurse with the assertion that he was going to act so badly that, "I'll get myself kicked out of here."

During the therapist's visit, he was at first obviously uncomfortable and quite unresponsive to efforts to engage him in conversation. He denied any interests, ambitions, or worries. He invited personal questions but only to deny their relevance to him. Most of his spontaneous comments expressed skepticism about "this psychiatric business" and emphasized how much better off he would be at home.

It was soon apparent that beneath this facade was a pathetic degree of isolation and impoverishment of emotional attachments. He regarded others with suspicion and appeared constrained to test their good will. As his confidence in the therapist increased, he began to express resentments toward specific individuals on the ward. He then went on to tell more about his actual feelings towards his parents.

He had never felt close to his mother. He sensed the hostility and disappointment which marked her attitude toward him. Father, on the other hand, was a person with whom he had been closely identified. Yet this relationship was rendered tenuous by father's inaccessibility and apparently casual interest in his son's welfare. The patient said that he "never knew where I stood with him" and frequently expressed disappointment over father's failure to allow him to share activities or interests. He made repeated efforts to help out in father's shop, but his presence was either indifferently accepted, or he was cautioned "to keep out of the way." Nevertheless, he continued to picture himself as following in his father's footsteps. He developed no relationships of this character among his school friends or from contacts with other adults.

It was then learned that his illness had started shortly after he had borrowed the family car without permission and wrecked it in a collision. This episode marked a breakdown in his relationship to father, who now regarded the patient with frank contempt and disgust. For mother, it merely substantiated her misgivings about him. There was no reassurance or forgiveness to support him in his humiliation.

Subsequently, he spent as little time as possible at home but sought the company of his high school colleagues. Among them, he tried to represent himself as an adventuresome, emotionally independent "character." With apparent bravado he frequently recounted his version of the accident and his indifference to the consequences involved. This group experience afforded some security. The relapse which preceeded his current hospitalization dated from successful completion of his college entrance examination. As he and his friends talked of graduation from high school, careers, and all going their respective ways in life, he saw the fragmentation of this group and suffered a renewed sense of isolation. He was quite unable to see a future for himself.

In the light of these circumstances, it became possible for the therapist to define his role more precisely. This role became essentially that of a sympathetic, assessible father, sharing activities and emotional concerns with his son. The therapist identified himself to the patient by recounting his own background and interests. Considerable time was spent in informal, friendly conversation. They went out together to dinner and on sight-seeing trips. The patient was allowed to drive the therapist's car. In the course of these trips, to facilitate the identification process, visits were made to the therapist's college and an effort was made to recapitulate his own career from an age which approximated that of the patient.

At times the patient "tested" the limits of the therapist's affection and permissiveness by unreasonable requests. For example, he asked to borrow the therapist's car, despite the fact that he did not have a license valid for the state and was inexperienced at city driving. The therapist sympathized with his fantasy but refused to request on common-sense grounds. On other occasions, demands for very expensive or exotic foods were sympathized with but considered impractical in view of the limitations of the hospital dietary service. As soon as the patient realized that the therapist neither resented or felt it necessary to fulfill his demands, the latter were quickly dropped and replaced by more reasonable anticipations.

A minor relapse occurred when the therapist undertook the treatment of another patient on the ward. However, within a few days he again be-

came convinced that this did not mean any change in the security of his own relationship to the therapist. In fact, he made friendly overtures toward his rival. During this time, he had suffered a return of diarrhea and refused to eat. Interestingly, he heralded his recovery by sending out another patient to a nearby restaurant to bring in the same type of sandwich that he had eaten on the occasion of his first meal with the therapist. He then resumed taking the hospital diet, and his bowel symptoms quickly subsided.

There was a gradual disappearance of the provocative behavior which had characterized his first few weeks on the ward. He talked more about his therapist and of future plans. He decided to go to college and sent in applications for admission. Identification with the therapist was further evident in his ward behavior. He began to give advice and counsel to other patients—becoming their "psychiatrist"—and took them out to lunch and baseball games, returning with ice cream and candy for those who had been unable to leave the hospital. Within a few weeks, he was one of the leaders of ward activities. Coincidentally, his feelings toward others became more spontaneous and affectionate. Meanwhile, the therapist remained in the background encouraging this exploitation of social skills and new ventures in interpersonal relationships.

At the time of discharge, he weighed 145 pounds and had no bowel complaints. His medications were stopped and his diet liberalized without untoward effects. For several months, contact was continued by an exchange of letters. The availability of the therapist was again emphasized, but did not prove necessary. After a summer at home, which was remarkable for the equanimity and tolerance with which he faced the old family discords, he entered college in the fall.

Follow-up:

In response to a follow-up letter two and one-half years later, the patient wrote as follows. "Somehow, this letter to you brings back a lot of memories, predominantly pleasant. A short time after I left, I realized that my relationship with you, with several of the nurses, and some of the other patients (most of the names of whom are long forgotten), gave me the first definite feeling of security I had ever known. Maybe this realization is what has given me the ability to get along with people and to understand them, and to establish relationships which I could very rarely do prior to my stay in the hospital. It is probably evident to you by now that since you saw me last, I have gained more maturity and stability. These are the likely reasons for my good health."

He went on to say that he was in his third year of college, enjoying a full range of activities and normal diet. He weighed 165 pounds and had been troubled only a few days a year with mild diarrhea. There had been no recurrence of fever, anorexia, weight loss, or abdominal cramps.

Summary

A psychotherapeutic method, previously described by Lindemann, which may be employed in certain cases as an adjunct to the conservative treatment of ulcerative colitis has been illustrated. In general terms, the psychological setting for this illness has been characterized as a specific defect in the development of capacity for secure interpersonal relationships, the latter being conceived as a necessary condition for self-esteem and tolerable freedom from anxiety. The psychotherapeutic process has been outlined in terms of a dynamic relationship between patient and therapist. Initially, as an expedient to ameliorate distressing feelings which appear to aggravate the disease process, this experience is designed to reconstitute a precarious form of interpersonal relationship which existed prior to the illness. The marginal emotional comfort which existed prior to the traumatic events preceding the disease may thereby be restored. This relationship can then, by virtue of the patient's experiencing critical differences between it and the prototype it imitates, become a learning process for the development of more rewarding and less vulnerable patterns of behavior.

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Peganone , a New Antiepileptic Drug

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Since the discovery of the anticonvulsant properties of Dilantin and more recently, Tridione, by experimental methods, a considerable number of useful drugs have been developed. The field of epilepsy is justly pointed to as an area where outstanding contributions have been made in advancing our knowledge of neurophysiology, diagnosis and therapy.

Despite this fact there is still room for new, more effective and less toxic medication. Such common problems as sedation, ataxia, rashes and gum hyperplasia are annoying but can be managed by altering dosage or terminating use of the drug. More serious complications such as blood dyscrasias, nephrosis and liver damage introduce the element of a calculated risk in drug therapy. Such complications must be continually guarded against and research directed to finding effective but less toxic agents.

Using the multiple screening methods developed by Toman, Everett and Richards,[1] over 1500 drugs have been tested during the past eight years. A few years ago, on the basis of its anticonvulsant properties and low toxicity in animals, Nuvarone (AC114), 3-methyl-5-phenylhydantoin was submitted for clinical evaluation in humans. This drug proved to be effective and had a low incidence of side effects.[2,3,4] Nevertheless, after extensive clinical testing, several cases of blood dyscrasia were reported.[5]

On the basis of the theory first reported by Richards, to the effect that in certain structures the substitution of an ethyl group for the methyl group on the nitrogen may reduce the toxicity of a drug, the n-ethyl analogue of Nuvarone was submitted for clinical investigation. While less potent on a weight basis than Nuvarone, the 3-ethyl-5-phenylhydantoin, Peganone, is less toxic, and thus far, no serious complications have been reported. The present report deals with a clinical evaluation of Peganone in 157 patients. This group represents patients previously unsatisfactorily and incompletely controlled after trial with established drugs, including phenobarbital, Dilantin, Mesantoin, and Tridione. Usually Peganone is added to some other anticonvulsant medication but 20 patients are on this drug alone. A total of 43 patients have been on the drug one year or longer, 63 for 11 months, 31 for 10 months and 20 for 8 months. The drug is preferably given one half hour before meals. In cases where nocturnal or morning seizures are most frequent, the heaviest dose is given just before retiring. The daily dose varies from 0.5 to 1 gram in children, and from 2 to 3 grams in adults. When Pega-

TABLE I

Effect of Peganone on Epileptic Seizures

Seizure Classification	No. of Cases	Clinical Response* C	G	F	P	Percent Good or Complete Control
Grand Mal	24	16	5	1	2	87
Grand Mal Petit Mal	26	12	7	3	4	73
Grand Mal; Petit Mal; Petit Mal Variant	8	3	2	1	2	62
Grand Mal; Psychomotor	15	6	4	3	2	66
Grand Mal; Petit Mal; Psychomotor	9	3	2	1	3	55
Grand Mal; Petit Mal; Petit Mal Variant; Psychomotor	5	1	2	1	1	60
Petit Mal	5	1	1	1	2	40
Petit Mal; Petit Mal Variant	2	0	0	1	1	0
Petit Mal; Petit Mal Variant; Psychomotor	5	0	1	1	3	20
Psychomotor: Psychomotor Variant	21	8	6	3	4	66
Petit Mal Variant	6	1	2	1	2	50
Petit Mal Variant Psychomotor	8	2	2	1	3	50
Totals	134	53	34	18	29	65

*Key: C—Controlled: G—75%—99%: F—35%-75%: P—Less than 35% controlled.

none is used in combination with other anticonvulsants, it is often possible to reduce the dosage of the other drugs. The anticonvulsant drugs most commonly used with Peganone were phenobarbital, Mebaral, Mesantoin, Diamox, Paradione, Tridione, Mysoline and Dilantin.

Table I shows a summary and evaluation of the results in 134 patients who have been on Peganone for 8 to 18 months. I should be emphasized that these patients were not controlled on their previous therapeutic regime and would all have been classed in the "poor control" group before addition of Peganone. Detailed case reports are submitted on five of the cases:

Case 1. A.W., age 6, Male.

Previous History: There was no history of any birth injury, and development was normal to about the age of four. There was no family history of epilepsy. When four years old the patient developed a febrile illness, which was diagnosed as "questionable" encephalitis.

Onset of epilepsy and previous therapy. Grand mal seizures began at the age of five. The attacks were severe and frequent (up to four a day), and the patient often injured himself, on one occasion fracturing his jaw. The tongue was frequently bitten, and he would urinate during the attack. Usually he was confused and drowsy following the attack, and on one occasion status epilepticus developed.

The patient was examined on December 6, 1954. At that time clinical examination of the nervous system revealed no abnormality. Blood chemistry, spinal fluid, x-rays and all other laboratory tests were normal, with the exception of the EEG. This showed fast frequencies with "spiking," compatible with a diagnosis of grand mal epilepsy. At this time the patient was taking "Mebaral," ½ grain 3 times daily, but without any control of the seizures.

Response to Peganone. Peganone was added to his existing medication in doses of ½ tablet (125 mg.) 4 times each day (before meals and on retiring). The patient was entirely free of seizures for a period of three months. Following this, he had one grand mal attack on arising. His bedtime dose of Peganone was then doubled (250 mg.), leaving the daytime therapy at the same level. Since that time (over a year ago) he has been completely free of seizures.

A complete blood count, carried out every month, and liver function tests and urinalysis performed at the same intervals have all been normal. There has been no hyperplasia of the gums, and no disturbance of gait. He is alert, bright and exhibits interest in things around him. I.Q. is entirely within normal limits. There has thus far been no evidence of any toxic manifestations.

Case 2. I.S., age 44, female, married, 2 children.

Previous History. There was nothing of note prior to the age of eleven, and in particular, no history of petit mal or psychomotor disturbance before the onset of her seizures. The family history was also negative.

Onset of epilepsy and previous therapy. Following an accident at the age of eleven, the patient developed grand mal epilepsy. She was examined at several major clinics, and medication included Mesantoin, Dilantin, Mebaral, phenobarbital, Phenurone, and Mysoline. In spite of varying doses of all these drugs, alone and in combination, her seizures remained uncontrolled. When seen on September 23, 1954, she was suffering from grand mal attacks, ranging in frequency from one in every 10 days, to 2 and 3 attacks daily. She had injured herself repeatedly, and showed scars on her face, and bruises on both arms and both legs. Clinical examination revealed no abnormality in the nervous system. Her gums were very hyperplastic, the tongue was scarred and lacerated, and she showed a large scar from an old burn suffered during an attack. All laboratory tests were normal, with the exception of the EEG which showed fast frequencies and "spiking" compatible with a diagnosis of grand mal epilepsy.

Response to Peganone. On December 23, 1954, the patient was started on Peganone therapy, 500 mg. 4 times daily (before each meal and at bedtime). She also received 1.5 gr. Mebaral daily. There was one attack on the following day, but since that time she has been free of seizures. She is now completely controlled without drowsiness, and she and her family are extremely happy with the results.

Complete blood count, liver function tests, and urinalysis were carried out monthly and were always normal. Three to four months after starting on Peganone the gum hyperplasia (previously noted) had disappeared. There were no toxic manifestations.

Case 3. W.Y., age 20, male, single.

History and previous therapy. The patient had a number of febrile illnesses during childhood, one of which was diagnosed as rheumatic fever, at age 6. At age 7 he first suffered from petit mal attacks, and these persisted at a rate of several each day until he was 14. At that time he had his first grand mal attack and this was repeated about once a month. On one occasion he was free of attacks for a three month period; at other times, the seizures would be as frequent as 3 times in one day. Clinical and laboratory findings in this case were entirely normal. He had been treated with phenobarbital, Mebaral, Mysoline, Dilantin, Mesantoin, Phenurone, Gemonil, Hibicon and Chlorhibicon, without achieving control of his seizures.

Response to Peganone. In view of the severity and frequency of the attacks, Peganone was given in doses of 500 mg. 4 times a day together with 1½ gr. of phenobarbital daily. There were two seizures after withdrawing him from his previous medica-

tion. Following these, he has had no seizures whatever, except on one occasion when he missed his medication while on holiday. His personality has improved greatly. Previously he had lost many jobs but he is now employed full time, and also taking a vocational training course.

Monthly laboratory tests were all normal. There has been no hyperplasia of the gums, no vertigo or other cerebellar disturbance, in fact no toxic manifestations whatever.

Case 4. D.F., age 19, male.

History and previous therapy. There was nothing of note in this patient's history prior to the onset of his attacks. No family history of epilepsy. At age 11, the patient began to suffer from petit mal, which was later complicated by grand mal, and then psychomotor seizures. These attacks became so frequent that he was kept home from school at age 13. He was examined at several clinics, and had been diagnosed as a mental defective, though on subsequent psychiatric examination he was reported as being normal, with the exception of being withdrawn and illiterate. Clinical examination and laboratory tests were normal except that the EEG demonstrated a psychomotor focus in the right anterotemporal region. Previous medication in various combinations including Dilantin, phenobarbital, Mebaral, Mesantoin, Hibicon, Gemonil, Phenurone and Milontin did not control his seizures.

Response to Peganone. Treatment was started in November 1954. He was given Peganone 500 mg. 4 times daily, Dilantin 2.5 gr. daily and Mebaral 2.5 grains daily, in divided doses. He had a few psychomotor attacks at the beginning of this treatment, but since then he has been completely seizure-free for over a year. He is happy, employed full time, and has had two raises in pay.

Monthly laboratory tests (as described for the other cases in this report) were all normal. No toxic manifestations appeared.

Case 5. C.L., age 52, male, married.

Previous history. The patient had the usual childhood illnesses, and typhoid fever at age 9. He was accepted as medically fit for service with the Marine Corps, and had no history of other illness, apart from malaria at age 23. He had no family history of epilepsy.

Onset of epilepsy and previous therapy. The patient's attacks date from a skating accident at the age of 13 in which he suffered from "cerebral concussion." Shortly after this, he developed grand mal seizures, and the picture was also complicated by petit mal and psychomotor attacks. Grand mal and psychomotor attacks occurred about once or twice a month. His petit mal seizures varied from one to ten each day. He was discharged from the Marine Corps, and drifted from job to job, usually being discharged after one or two attacks. His treatment included phenobarbital, Mebaral, Dilantin, Mesantoin, Nuvarone, Hibicon, Chlorhibicon, Gemonil, Phenurone, Diamox, and Mysoline. In spite of the use of these drugs, alone and in combination, his seizures remained uncontrolled. His grand mal attacks were severe, and frequently resulted in injury. The psychomotor attacks led him to pilfering, often of articles of no value to him and he was arrested several times. He was extremely depressed, agitated about his condition, and withdrawn.

Response to Peganone. On November 22, 1954, the following therapy was commenced: Peganone 500 mg. 5 times daily, Mesantoin 0.1 gm. 5 times daily, and phenobarbital 1 gr. 5 times daily. (This patient is 6' 3" tall and weighs 220 pounds which explains the large doses of drugs used.) Since that time he has had 3 grand mal seizures, all of which occurred near the beginning of treatment. For over 13 months he has been entirely free of seizures. He is now in steady employment, and has been for the past 9 months.

No reactions were observed. The usual laboratory tests, carried out at monthly intervals, were all normal. It is interesting to note that there was severe gum hyperplasia at the beginning of treatment, attributed to previous Dilantin therapy. This condition gradually receded on the above regime, and had completely disappeared by the end of about 4 months.

Peganone is most effective in grand mal, but also useful against other seizures and has produced effective control in psychomotor attacks and the variants which are generally the most difficult group to treat. Even the smaller percentage of control in these cases is of considerable therapeutic interest.

Of particular importance is the fact that these beneficial therapeutic effects were obtained with a notable paucity of side effects. It is also of interest to note the high dosage possible without adverse effects. In our experience, Peganone may be added to other anticonvulsants without complications or increased side effects. The possible exception is its use with Phenurone. When Phenurone and Peganone were used together, paranoid symptoms developed in two psychomotor patients. Removal of the Phenurone stopped these unpleasant symptoms. Up to the present time, Peganone has shown fewer side effects than any other anticonvulsant in our experience. Thus, there has been no ataxia or gum hyperplasia as seen with other hydantoins, and sedation has been noted only on the high doses.

Blood counts, liver function tests and urinalysis have been carried out routinely on all patients. It is well known that wide fluctuations in white counts may normally occur. A moderate lowering of the white count should alert the physician to repeat counts.

For example, patients on phenobarbital sometimes show white counts as low as 3000 to 4000. On continuing medication higher counts are observed. The same type of fluctuation was observed in a few patients on Peganone (usually in combination with other drugs). Of the group, 3 per cent showed occasional white counts around 4000 but all returned to higher values while Peganone was continued.

The results thus far have indicated no toxic effects on the hematopoietic system. Liver function tests and urinalysis have revealed no deviations from normal values in patients on Peganone.

Two cases developed a mild rash which disappeared in three days on discontinuing the drug. One of these patients was put back on Peganone and had no recurrence of the rash. About 5 per cent of the patients complained of gastro-intestinal disturbances, usually a burning sensation after taking the drug. This was easily remedied by taking a glass of water with the drug or taking food immediately after the drug was ingested.

Summary

The present report deals with a study of Peganone (AC695), 3-ethyl-5-phenylhydantoin, in 157 patients with data on 134 who have been on the drug from 8 to 18 months. These patients were inadequately controlled on previous medication. In 20 patients the drug was used alone and in 114 it was added to previous medication.

Conclusions

1. Peganone is an effective drug in the control of epileptic seizures.

2. It is most effective against grand mal. In combination with other anticonvulsants it is useful in the control of psychomotor attacks and is of considerable benefit in the difficult variants.

3. The effective daily dose of Peganone is 2 to 3 grams for adults. In children, 0.5 to 1 gram is used.

4. A notable feature of Peganone is the low incidence of side effect, less than any anticonvulsant in our experience. No serious toxicity has been seen. Of particular interest, since Peganone is a hydantoin, is the absence of gum hyperplasia and ataxia.

5. Peganone combines well with other antiepileptic drugs and such combinations often result in control of seizures with no additional side effects. However, if combined with Phenurone it must be used with caution.

6. Because of its effectiveness, synergism with other anticonvulsants and exceptionally low incidence of side effects, Peganone is, in our experience, a valuable addition to the anti-epileptic armamentarium and further clinical evaluation is warranted.

Authors' Note: The drug, Peganone, used in this study was generously supplied by Abbott Laboratories, North Chicago, Illinois.

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Relation of Chlorpromazine to Epilepsy

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Comprehensive reports on the effect of chlorpromazine in epilepsy are rare with observations being made on comparatively few cases. Except for the recent paper by Bonafede[3] who observes that chlorpromazine has been highly effective in controlling behavior disturbances among a group of 78 epileptic patients all but three being mentally defective all previous reports made only occasional reference to epilepsy. Winkelman[25] mentioned that four out of six patients did not benefit from the drug but the results were good in the two other patients, i.e., the seizures were controlled only if chlorpromazine was added to the previous anticonvulsant regimen, which in itself was not effective. Lehmann[15] stated that the drug is effective in epileptic clouded states. Shea, Alman and Fazekas[8] found that postconvulsive excitement may be controlled by the administration of chlorpromazine and, in cases of head injury, convulsion could be controlled by about half the dose of cortical depressants when chlorpromazine was given concomitantly. Kinross-Wright and associates[10,11,12,13,19] found a diminution of seizures in five of nine patients when chlorpromazine was combined with standard anticonvulsants; however, some of the patients became worse when treated with chlorpromazine. The same author reports that one patient on chlorpromazine experienced brief grand-mal seizures. In this case there had been no previous history of convulsive disorder. Effective use of chlorpromazine in status epilepticus was reported by David et al.[5] Labhardt[14] observed a decreased amount of tension and irritability but he also remarked that the convulsive phenomena were apparently increased. He quotes Schmid to have observed typically epileptiform crises in two cases.

Convulsive seizures were reported by other writers and epileptic phenomena are generally regarded as one of the toxic effects of the drug. Anton-Stephens[1] mentions that one post-leucotomy patient had epileptic fits during chlorpromazine treatment. Lehmann and Hanrahan[16] noted a low seizure threshold; one patient, who had been given 2 ml. of nikethamide after chlorpromazine developed status epilepticus. Lomas, Boardman and Markow[18] report on ten patients who had epileptic fits during chlorpromazine treatment. The fits had no relationship either to dosage at the time, to total dosage or to duration of treatment. Six of the ten had leucotomies and four of these had fits immediately after the operation but none for many years. The two others had not had any previous seizures. None of the post-leucotomy patients had suffered a seizure since treatment with chlorpromazine was discontinued. In discussing the remaining four patients, the authors mention a case of arteriosclerotic dementia who had no fits before treatment with chlorpromazine but continued to have them after it was discontinued; one case of post-traumatic dementia had a succession of fits only while she was on treatment; and two schizophrenic patients, one of them had occasional fits in the remote past. Fabisch[6,7] also believes chlorpromazine to be the possible cause of convulsions. He reports a convulsion during EEG in a patient under treatment with chlorpromazine.

In our material we found one patient who developed generalized convulsions shortly after chlorpromazine treatment was started and who did not have seizures before. She is 41 years old and diagnosed as Schizophrenia, Hebephrenic type. The day after chlorpromazine treatment started she had two generalized seizures. Medication was continued but she had no further seizures.

These observations suggest that chlorpromazine has epileptogenic properties which may lead to manifest fits in susceptible people. On the other hand, epileptic behavior disorder is favorably influenced by chlorpromazine. Bonafede found the drug to be highly effective in controlling both episodic and chronic disturbed states in epileptics.

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Lehmann[15] also reported good improvement in nine epileptic patients.

It is evident from the above data that no simple statement can be made regarding the effects of chlorpromazine in epilepsy. Although valuable in treatment, chlorpromazine also seems to have epileptogenic properties. The issue is also complicated by the assumption of an antithesis between the seizures and non-ictal psychiatric disorder (Gibbs[19]) which is believed to exist in temporal lobe disorders, i.e., if the psychomotor seizure is blocked the psychiatric disorder is likely to be intensified. This antithesis makes it difficult to evaluate the over-all effect of a new therapeutic effort. Finally, the relation of chlorpromazine to anticonvulsants should be considered. In the quoted reports good results regarding seizure control were obtained when chlorpromazine was added to the previous anticonvulsant regimen. According to Bonafede,[3] an increase of seizure-frequency often occurred if the previous medication was reduced at the time when chlorpromazine was added to the regimen. However, he did find that patients stabilized themselves on the reduced dosage of phenobarbital.

The following is the description of the effect of chlorpromazine in a group of institutionalized epileptic patients:

The patients, all female, were selected from a group of epileptics confined on the chronic, disturbed wards of the hospital.

a) Two patients showed episodic disturbed states which necessitated removal to the chronic disturbed ward until the attacks cleared up. b) Eight patients showed chronic disturbed states which necessitated a continuous confinement on the chronic disturbed ward.

These states, both the episodic and chronic were characterized by irritability, negativism, hyperactivity, temper outbursts, assaultiveness, and destructiveness. They were, as a group, considered to be the most disturbed patients on the ward. Seclusion and heavy sedation was necessary to control their behavior. They were unemployable and not accessible to occupation and recreational therapy. The patients were between 31 and 49 years. The average length of hospitalization is 14.3 years. The pre-chlorpromazine medication consisted of phenobarbital and dilantin. Chlorpromazine was given in average daily dosages of 200 mg. to 300 mg.

This therapeutic trial with combined anti-convulsant chlorpromazine medication was carried on over a ten month period with good results. Two patients who displayed episodic disturbed states are now on the parole wards and ready for rehabilitation. Their irritability, aggressiveness and assaultiveness, anxiety and tension are now no longer present. They are pleasant, co-operative and take part in all ward activities. The eight patients in the chronic disturbed group showed marked reduction of irritability, hostility, aggressive and destructive outbursts. Four of the patients are now on quiescent wards. They take part in occupational and recreational activities. The remaining four patients also show improvement over their previous behavior although they remained inactive and non-participating. Seizures during chlorpromazine treatment occurred in six cases out of this group. The seizures were confined to the early period of treatment, i.e., from the first day to third or fourth week of treatment. In four cases, the anticonvulsant medication was reduced by 1/2 to 1/3 of previous dosage when chlorpromazine treatment started. We found that seizures were less likely to develop if the pre-chlorpromazine medication is continued. Continuing the previous medication did not have any ill effects. However, anticonvulsants were again reduced if patient stayed seizure-free and this "delayed" reduction of medication was not followed by seizures.

It took about three months before the change in previous behavior disturbance became obvious. There was no direct relationship between seizure control and improvement in behavior. In fact, the case which responded to chlorpromazine with a series of seizures, has shown a marked improvement in behavioral areas. However, a similar degree of improvement was seen in cases for whom the transition to the new regimen was smooth and seizure free.

EEG. Electroencephalography was done in five of the above cases before and after three months of chlorpromazine treatment. In addition, two other cases recently admitted received the combined anticonvulsant-chlorpromazine medication and were examined in the similar manner. In the pre-treatment records, the characteristic features were the irregularity of the background activity with a diminished alpha content, pronounced harmonic activity and an increased amount of fast frequencies. Episodic slow and fast activity occurred diffusely in varying degrees in all cases. All pre-treatment records showed abnormality in the temporal lobes. The spike and dome pattern was present in one case; the other cases showed high amplitude slow wave (4-7 c/s) activity. The abnormal activity was bilateral but a lateral predominance was apparent in three cases. The records taken during combined anticonvulsant chlorpromazine medication were quite similar to the pre-treatment records; however, most cases showed a decrease of fast activity and more prominent alpha waves. The abnormal activity in the temporal lobes did not improve. In five cases it remained unchanged and in three cases it appeared even worse.

The effect of chlorpromazine on the EEG was the subject of several investigations. Ozima and Ogle[2] failed to find any specific

changes. According to Lehmann and Hanrahan[16] and Shagass[20] only changes secondary to drowsiness are present. Terzian[23] also maintains that only those changes can be found which are consecutive to alterations in level of awareness. The latter reports a slight increase in the amplitude of normal rhythms, and, in the desychronized curves of anxious subjects, the reappearance of well organized alpha rhythm. Turner and Berard[24] also found a shift towards alpha dominance under the influence of chlorpromazine. Liberson,[17] in a group of chronic schizophrenic patients under chlorpromazine treatment, found a significant regularizing effect on alpha rhythm associated with an increase of its continuity and associated with a slight decrease in frequency. Regarding the records of epileptic patients, Fabish[6,7] found that in patients with abnormal interseizure recordings the abnormal phenomena increase after intravenous administration of chlorpromazine. The effect is similar to that observed on activation by hyperventilation and photic stimulation. Szatmari,[22] reports increased sensitivity to hyperventilation and decreased Metrazol threshold.

In our group also, some increase of epileptic activity was noted. Persistence or increase in epileptic activity does not further the view that chlorpromazine has anticonvulsant properties. The increase in electrical seizure pattern and the occurrence of clinical seizures during chlorpromazine treatment is rather difficult to explain. In our series the seizures occurred at the beginning of treatment. Other reports emphasize that seizures may occur at any time during the treatment. This would appear to mean that chlorpromazine is apt to reduce seizure-threshold. In some of the reported cases seizures occurred in association with hypotensive reaction. In our cases the hypotensive effect was not conspicuous so the seizures cannot be attributed to derangement of cerebral circulation.

Lowering the seizure-threshold is seldom a pronounced effect of chlorpromazine. It is manifest almost exclusively in predisposed individuals only. One could say that if convulsions occur during chlorpromazine treatment, a history of epilepsy should be strongly suspected. This action is quite easily counteracted by anticonvulsant drugs.

Chlorpromazine itself seems to have properties which oppose the convulsive effect. This is shown by the fact that patients may remain seizure-free even if anticonvulsant medication is reduced. Occasional cases have been reported where seizures were controlled only when medication was supplemented by chlorpromazine. This apparent contradiction might be resolved if we realize that pharmacological effects are determined not only by the properties of the agent itself but also by the condition of the substrate at the time of the action. Accordingly, the effect of chlorpromazine will depend on a number of factors. Such factors appear to be: 1) history of previous seizures, indicating low convulsive threshold, along with phasic variations of the threshold during the course of illness, 2) amount of other medication, 3) state of tension and amount of afferent stimuli at the time of administration, 4) the degree of hypotensive action, 5) the type of seizures may also be significant. Patients with different localization of the abnormality may react differently to the drug.

On the basis of the quoted reports and the cases described here, the following generalizations can be made: chlorpromazine 1) tends to decrease seizure threshold; 2) this action is possibly counter-balanced by potentiating the effect of anticonvulsants and 3) by decreasing the level of tension. The reduction of tension is probably due to the depressant effects on the bulbo-meso-diencephalic reticular system and to an inhibition of the afferent stimuli entering this system. This action would counteract the triggering of seizures by affective stimulation.

The impression gained from clinical observation regarding the epileptogenic properties of chlorpromazine is not in accord with animal experiments which indicate anticonvulsant properties. (Courvoisier et al.[4]) Further experiments will be needed to clarify this question. Probably the difference between experimental and clinical application accounts for the difference in the effect.

The improvement of behavior does not depend on changes in the epileptic activity. On the other hand, amelioration of electroencephalographic signs of disorganizing tension appears to be significant concomitant of improved behavior.

Summary

1. A brief survey of literature is presented regarding the toxic, epileptogenic properties of chlorpromazine and its effectiveness in the treatment of epileptic disorders.

2. In a group of hospitalized, disturbed epileptic patients a significant improvement in behavior was achieved with the use of chlorpromazine.

3. Occasionally a transient increase in seizure activity occurred under chlorpromazine treatment.

4. Chlorpromazine appears to potentiate the effect of anticonvulsant drugs. This potentiating effect is seldom immediate; there is a critical stage with danger of seizures during the change in medication. The advisable procedure is to continue the previous medication for a while after chlorpromazine is added. If patient remains free of seizures, the dosage of anticonvulsants may be reduced.

5. Although in itself not anticonvulsant and occasionally seizure precipitating, chlorpromazine is valuable in the treatment of epilepsy, particularly if the condition is accompanied by a severe disorder of behavior.

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Raynaud's Disease Studied by Hypnosis

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Raynaud's disease is defined as a functional disease of the extremities, mainly of young women, in which cold or emotion causes constriction of the arterioles, and which may lead to symmetrical gangrene of the fingers and toes.[1,2] Scleroderma has often been observed as an accompanying feature in Raynaud's disease. Mufson[8,9] suggests that these are not two entities but rather that scleroderma is a stage in the progression of Raynaud's.

Early investigations of this disease were of a physiologic and anatomic nature, but during the last quarter century, more attention has been given to the role of psychological factors. Raynaud himself noted the effect of emotions on his subjects, suggesting that the syndrome was a form of vasomotor neurosis, and a number of workers since have pointed out the relationship between emotions and vasospastic disorders.[1,10,11]

Patients suffering from vasospastic disorders have shown a drop in skin temperature at the fingertips of as much as 13.5° C. under emotional stimulus. It was noted that the intensity rather than the type of emotion appeared more significant.[6,7] Using hypnosis, efforts have been made to alter the state of the peripheral vessels by direct suggestion of temperature change in the fingers. These were not successful, although it was believed possible that suggested emotional states might alter peripheral temperature.[5]

The personality of patients with Raynaud's disease has been described as a basically dependent one, with the onset of the disease frequently following the loss of a love object upon whom the patient has been overdependent.[4,8,9] It has been postulated that initially there was a fear of loss of the love object, followed by rage against the love object because of desertion. The patient then blames himself and seeks expiation through the disease which represents self-sacrifice and partial destruction.[4]

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There is little information about the psychological treatment of vasospastic diseases. Lipkin et al.[2] utilized suggestion in the form of impressive but physiologically impotent apparatus and obtained results comparable to pharmacodynamic agents. He pointed out the value of psychological methods, and also the difficulty in evaluating therapeutic agents in these patients. Psychotherapy with vasospastic syndromes may be effective.[3,11]

We wish to report the case of a patient with Raynaud's disease with scleroderma, referred from the Department of Medicine for evaluation of emotional factors in her illness.

Case X was a married woman of 27. Her illness began in August, 1943 with a transient blanching of one finger. This was followed by progressive involvement of her fingers, hands and feet with periods of complete remission. At the time of her admission to University Hospitals in December, 1953, a typical attack involved blanching of her face, her arms up to the elbows, and legs up to the knees. The return of the circulation to the skin was accompanied by hyperemia and excruciating pain. Shortly after admission, she received ACTH and cortisone with a dramatic response. Within a few days the spasms had disappeared and the patient felt better than she had for several years. The improvement was maintained after drugs were discontinued and on admission to the Psychopathic Hospital the patient felt well, complaining only of very transient episodes of spasm confined to the tips of the fingers and toes.

The patient came from a closely knit family. Her mother was 62, and was described as a warm, friendly person who had always had "heart attacks". The patient was very attached to her father and his sudden death in 1941 was a severe loss. However, she had formed a warm relationship with her stepfather.

Birth and early development were normal. She was an excellent student, and had many friends. She had married at 18 years and had one child 8 years of age. Her husband was a passive person who was quite sympathetic to the patient and took over many of her duties during the more acute phases of her illness. The marriage was described as being a happy one except for the fact that she was never able to enjoy intercourse.

Physical examination showed the skin about the hands and face to be taut and shiny. There was shortening of the terminal phalanges with scarring.

Telangiectic spots covered her face, arms, back and chest. Otherwise the examination was negative.

The Wechsler-Bellevue indicated that the patient was of superior intelligence. Projective tests suggested that she was narcissistic, ambitious, and quite unhappy over her extreme dependence.

The patient was an excellent hypnotic subject. In a trance she was capable of regressing, and reliving in a very vivid manner, experiences dating back to early childhood. As far as we could ascertain this was done with great accuracy. The following information was obtained by the use of hypnosis.

Her personality as a pre-school child and at different times in her development was that of a "sweet and spoiled," self-centered girl who was quite adept at manipulating people to supply her wants, and making them like it. This was particularly true of her father. Her father's death when she was 14 was extremely traumatic to her and she was quite resentful when her mother remarried less than two years later. However, she shortly found, "I can wind him around my finger even better than my Daddy so I like him a lot." On reliving the time of the first spasm in 1943, we found that the patient, while playing, was struck in the neck by a ball. Angrily she left and sat on a swing for a while. Her anger passed in a few minutes. She began to fantasy happily about the ensuing dance Saturday night and what she was going to wear. It was then that she noticed her finger was numb and white. She was quite curious and called her friends over to observe it. The spasm passed off in a few minutes with a slight burning sensation and she thought no more about it. The next attack occurred in a few days when cold water was playfully thrown on her. While under hypnosis we followed the gradual development of the disease year by year.

In 1947 the patient moved to a warmer climate because of the effect of cold on her illness. She enjoyed it there but the disease was unabated. Through 1949-50-51 the disease was relatively quiescent, though she had returned to a colder climate. In 1952 her symptoms recurred with more severity than ever. No stress could be found in the environment at this time. Her marriage was happy and finances were better than ever before. She improved in the fall spontaneously and again no environmental change could be noted. The most severe exacerbation occurred in late 1953 and it was then that she was brought to University Hospitals for the first time, where she received cortisone and ACTH with improvement.

While in the Psychopathic Hospital the patient had two mild attacks of spasm, one when she became cold playing ball and one before recheck at Dermatology Clinic, about which she was apprehensive.

We then attempted to induce spasm under hypnosis. A thermocouple was used to measure temperature changes. Under direct suggestion, the patient reacted subjectively, complaining of numbness and pain, but no changes were observed. Suggestions of heat and cold were given locally and to the whole body. There were no significant temperature changes, though again, subjectively, the patient experienced the sensations vividly. The patient relived many emotional experiences which in the past had been associated with attacks of spasm. During these periods, she showed quite appropriate emotional reactions and complained of numbness and burning; however, no spasm or significant temperature change was observed. One of her fingers was immersed in ice water with and without hypnosis. Ordinarily such contact would have produced a spasm of the entire hand and arm. However, on this occasion even in the normal resting state this did not happen. The temperature dropped 17°F. compared to the control's 9°F. and her finger took several minutes to regain its normal temperature. There was no painful reactive hyperemia and the reaction remained entirely local. One might suggest the security that the patient felt in the total situation was sufficient to ward off the effect of the physiologic and psychologic stimulus to spasm.

Hospitalization was then interrupted and the patient returned home. When seen again several months later, she reported that in the interval she had done better than at any other time since her illness. During this period her husband was unable to work and the patient had to return to secretarial employment, do her housework and help on the farm. For several years prior to her hospitalization she had been unable to take care

of the house and her child without help. The patient attributed her continued remission to the increase in responsibilities she had, and expressed fear of the consequences should they lessen.

Discussion

We have studied a person with the narcissistic, dependent type of personality so often reported in Raynaud's disease. However, the illness did not follow closely the loss of a love object, nor was there any other stress which could be designated as a precipitating cause. As the disease progressed it became apparent that emotional factors such as anger and fear could precipitate individual attacks during a period of exacerbation of the disease, but no evidence that these factors could produce an exacerbation.

There was the suggestion that as the patient acquired more responsibility and fulfilled a more important role, her illness abated. This differs from most reports where exacerbations seem to occur with frustration of dependency needs.

Hypnosis proved valuable in the investigation of possible psychological factors and provided extremely clear memory pictures with appropriate emotions associated with attacks of spasm. However, under these conditions spasm did not occur; nor was there any significant change in skin color, skin temperature or heart rate.

This report suggests that the psychodynamics of Raynaud's disease as heretofore reported are not adequate or specific. Against this suggestion it could be argued that the hypnotically relived emotions were different from "natural" emotions; or perhaps the patient could not be expected to have spasms since she was in a state of remission. Emotion, however, may precipitate attacks when the disease is active.

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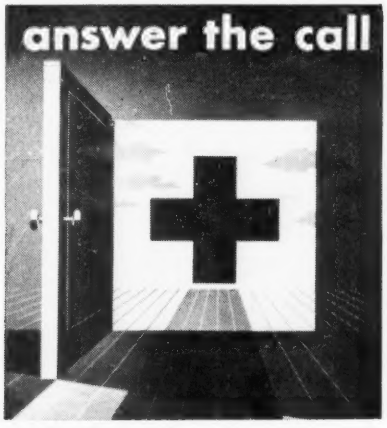

Psychoses Associated With Child Bearing

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Emotional problems associated with child bearing have been of medical interest for many years and they continue to be the source of perennial investigations. The nature of the illness provokes the question of whether they are complications of pregnancy, whether the pregnancy is a complication of the emotional illness, or whether they are coincidental. Other questions that arise concern the incidence, the treatment and the prevention.

The frequency of emotional disturbances associated with childbearing has been reported with wide variations by several investigators. Since many cases are relatively mild, there are a number that do not get beyond the care of the obstetrician. Many are adaptable to private outpatient care and are not available for statistical analysis as a part of an overall picture. Of those reaching more profound depths of illness, psychiatric hospitals are able to provide statistical material for analyses. Those reaching a psychiatric hospital level have provided the material for this investigation.

From 756 consecutive white, female admissions I made as admitting physician of the Milledgeville State Hospital during approximately a two year period, 50 cases were found to be associated with childbearing; giving an incidence based on admissions of 6.6%. There is a rather high rate of admission of aged patients at the Milledgeville Hospital and this, perhaps, makes the relative number of cases associated with childbearing lower than those reported in other hospitals with an admission rate of fewer elderly patients. Of the 50 patients of this study, 60% were catatonic, 26% hebephrenic, 10% paranoid schizophrenia, 2% manic depressive, (manic), and 2% organic (cerebral thrombosis). The age incidence ranged from 16 years to 43 years. The distribution of cases by age and diagnostic categories is shown in Figure 1.

The probability of the occurrence of a psychosis during pregnancy was found to be more likely during the first and second pregnancy which constituted 60% of the cases; 72% occurred within the first three pregnancies. The distribution of the cases classified by the order of pregnancy in which the episode occurred is shown in Figure 2.

In an attempt to determine the period of time during the childbearing that the psychosis occurred, it was arbitrarily decided

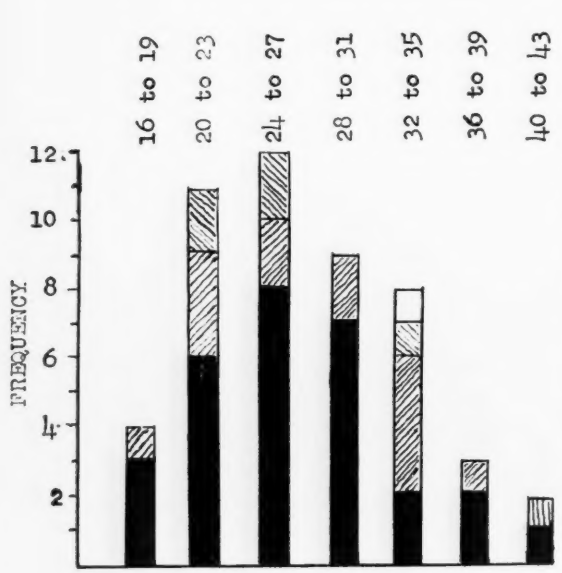

Fig. 1.

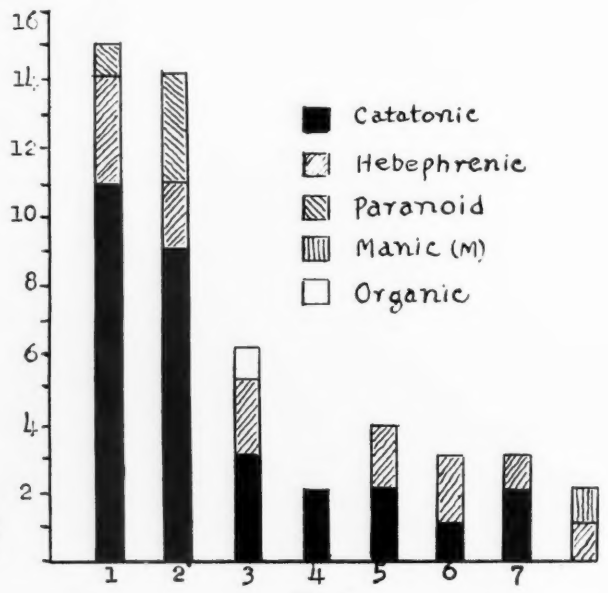

Fig. 2.

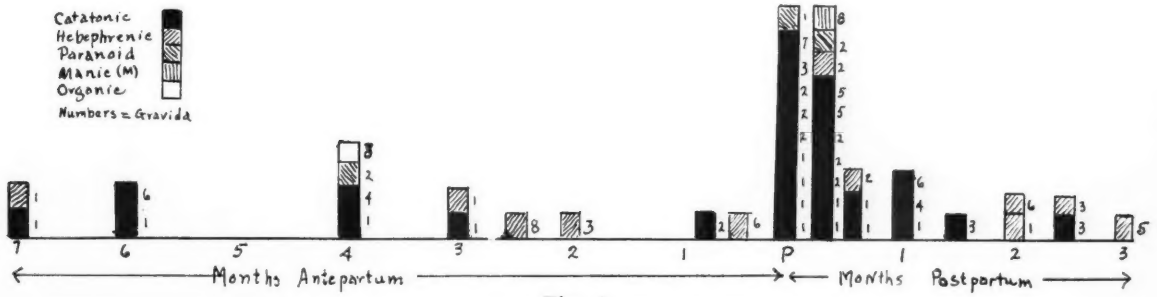

Fig. 3.

that this would include the time from the second month of gestation to the end of the third postpartum month. It was found that 40% occurred within the period of one week antepartum and one week postpartum, 26% occurred between the seventh month antepartum and one week antepartum, and 32% occurred between the first week postpartum and the third month postpartum. There was no apparent correlation in the time in the gestational and postpartum periods for the onset of the psychosis as related the parity. Two cases of gravida VIII occurred in the second and fourth antepartum months, one gravida VII occurred at parturition, two gravida VI, in the first and second months postpartum. The nature of the emotional disturbance, whether catatonic, hebephrenic, or paranoid, was not apparently definitely correlated with the gestational and postpartum periods as can be seen by Figure 3, except that the one case of cerebral thrombosis was postpartum and the single case of manic depressive was antepartum. The incidence of repeated attacks was found in seven, an incidence of 14%. These repeated attacks do not seem to be correlated with successive parities and occur in those with parity five, six, seven and eight as well as in lower parities. In two cases not included in this study but known to me on continuous treatment services, each had had seven deliveries with psychotic episodes associated with each pregnancy. One catatonic case of this series was associated with Caesarian twin delivery and four cases were associated with illegitimate pregnancies. Six of the 50 cases were associated with miscarriages.

In searching for factors that may in some way contribute to these episodes, constitutional and psychosocial contributions have been considered; 22% had one parent who was known to have had psychotic episodes and 24% had siblings with psychopathology. Collateral psychopathology in grandparents, aunts, uncles and cousins was not uncommon.

In the psychosocial sphere, five cases had either had previously borne stillborn babies or their babies had died in early infancy. One patient had a sister who had died from complications of childbirth and, at least, three had mothers whose deaths were attributed to childbirth. One patient in this series was the child born from a mother who died immediately following her delivery. There were nine cases whose mother had died before the patient had reached 10 years of age and the feeling was implied that most of them died "from having too many children." One case was deserted by her husband before she delivered.

The psychosocial attitude of the patient was considered from the following points of view:

(1) Attitude toward herself as a mother;
(2) Attitude toward her husband;
(3) Attitude toward her baby;
(4) Attitude toward the home and the family unit;
(5) Attitude toward others outside the immediate family unit; and
(6) Religious preoccupations.

These factors interlace in certain instances but in general constitute categories that describe the character of the illnesses observed.

Many patients exhibited both self-directed and projected tendencies toward self-destruction. Denial of her identity, refusal to eat, the desire to die, the feeling of being dead, suicidal threats, and attempts at suicide were seen in various cases. Self poisoning, attempts to leap into a well, attempts to drown herself and actually shooting herself in the chest, were the forms of suicide attempted

by these patients. They were seen chiefly in the catatonic and hebephrenic groups. Projected ideas of destruction through homocidal delusions, ideas of being poisoned, of being eaten up by parasites, and of delusions of immoral accusations were found in the paranoid group.

The psychosocial problems of the patients in reference to their husbands appear to be directed toward marital dissociation. Denial of the husband, failure to recall or recognize the existence of her marriage, negative hallucinations of the husband and delusions that the husband was dead or dying from an incurable disease occurred. Fears of being abandoned by the husband or of his unfaithfulness formed a large segment of delusions regarding the husbands. The projected tendencies included fears of aggression, of subsequent impregnation, of the husband performing perversions, of being killed and of smear campaigns against her. Finally, the tendencies toward violence and homicidal threats in reference to the husbands as a form of protection from their destruction, indicate an underlying need for dissolving the marriage.

With the introduction or anticipation of the introduction of a baby in the social milieu, there is evidence of lack of acceptance of the baby by the mother. Denial in the form of neglect, indifference to her baby, attempts to give her baby away, ideas she has never had a child, that her baby was dead or dying from an incurable disease expressed a milder form of rejection. In another group there was apparent wishfulfilling ideas of the child being forcefully taken from her, of neglect of the child by the nurses, and of heinous plots to destroy the child. When the pressure of rejection was most intense, there were threats of infanticide; and one case of actual infanticide by drowning.

Besides the rejection of the husband and the baby, destructive fantasy or acts directed toward the home were not infrequently seen. Wandering away from home, indifference toward duties as a housewife and mother were not uncommon modes of behavior. In two cases attempts to destroy the home by arson were seen. Unreal feelings regarding the home and finally destructive tendencies toward the furnishings and contents of the hon e were parts of the behavior patterns seen .n these cases.

Hostility toward people outside the patients' homes were less frequent but took the form of violence toward the mother and toward her physician. In a few instances erotic manifestations were seen in the delusions of being pursued by people with knives, guns, and actual beliefs of being in danger of sexual attacks by others. Threats of matricide were observed in two cases.

Religious preoccupations were not infrequent especially in the catatonic group. These were apparent attempts toward restitution and in absolving the guilt for the hostility of the patient. Preaching, praying, excessive reading of the Bible, waiting to be reborn, the ideas of having an earthly God, and the desire to sacrifice the baby by throwing it in the well were processes that appeared directed toward reintegration.

Discussion

Zilboorg (1929) has looked upon pathological emotional reactions to childbearing as being associated with rejection of marriage as a manifestation of homosexuality. The matter of homosexuality has been questioned by Anderson (1933) and also by Davidson (1936) who feels it is chiefly a rejection of marriage because of psychological immaturity and the difference in the post-partum and non-postpartum cases of psychosis is chiefly the somatic element of childbearing.

Boyd (1942) has pointed out the interaction of physical, physiological, psychologic, and social stresses as etiological factors. Brew and Seidenberg (1950) found the presence of a high percentage of mental illness in the family, emotional instability and conscious rejection of the pregnancy by both parents, latent homosexuality, psychological immaturity with parental attachments, and the threats to narcissism to be factors in these cases. McNair (1952) feels that childbearing threatens the independence of the mother who chooses to remain unemancipated from her parents, thereby threatening her needs to get love rather than to give love to her baby.

In the present study the psychosocial fac-

tors seem to have played an important role in the illnesses. They do not appear to exhibit any special factors in mental illness seen in the same diagnostic categories of non-pregnant cases aside from the role that must be played with the introduction of a baby in the patient's milieu. To some, pregnancy becomes prima facie evidence of sexual indulgence which in the hypermoral produces guilt and fears of social rejection. To others, it imposes economic stress, especially in families where the strain is already beyond endurance. The mother, who finds her responsibilities from toil extremely heavy, may find an added responsibility of a newborn unbearable. Identification with others who have had complications of pregnancy, and fears of the pain and of death may be causes for obsessions and rejections of pregnancy. Added to these factors are those individuals who are unable to accept a feminine role, who are immature psychosexually, and whose constitutional and hereditary personality structure is defective.

Treatment was essentially as in the same illness unassociated with pregnancy. Early recognition, preventive and supportive measures as well as sedation were used in most cases. In special instances consideration of sterilization in psychologically prepared individuals has been found useful. Electroconvulsive treatments were used where depression and suicidal threats were dangerous. The follow-up study of these cases has not yet been completed.

Summary

1. From 756 consecutive, white females, admitted to the Milledgeville State Hospital, 50 had illnesses associated with childbearing.

2. Reaction patterns of the psychoses were considered from the following points of view: (a) Attitude of the patient towards herself; (b) Attitude toward her husband; (c) Attitude toward her baby; (d) Attitude toward the home and family unit; (e) Attitude toward those outside the immediate family unit; and (f) religious preoccupations.

3. The chief difference in the pattern of the psychosis as compared to the same diagnostic category in the non-pregnant, appears to be the result of the social, economic, and psychic stresses of integrating the infant in the patient's life.

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Observations on Convulsive and Subconvulsive Electrotherapy During Intravenous Anesthesia

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The doctor who uses intravenous anesthesia should familiarize himself with its use and adopt the routine precautionary measure which make untoward effects preventable. This rule applies to a psychiatrist who uses light anesthesia as an adjunct to electrotherapy. Above all, the principles of facilitating respiration during anesthesia must be understood and used. In order to guard against accidents to my patients, I have reviewed anesthetic techniques, observed treatment procedures, read the journals of anesthesiology and even attended meetings of anesthesiologists. A most worthwhile article on the subject of preventable accidents in anesthesia, including intravenous anesthesia, is one by Macintosh, entitled "Deaths Under Anesthesia."

It has been suggested that the administration of anesthetics and relaxants by psychiatrists rather

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than anesthesiologists greatly increases the risk to patients. As to anesthetics, it appears that the advantage of experience with electrical stimulation added to a knowledge of the fundamentals of respiratory support places an electrotherapist in a position to do well by his patients. As to relaxants, anesthesiologists are to some extent indebted to the pioneer work of A. E. Bennett who introduced curarization as a protective measure in convulsive shock treatment. Anesthesiology may further profit by the work of T. R. Robie, in which he introduced electrotherapy as an adjunct to the treatment of barbiturate intoxication.

The period of the last 35 years marks an interesting cycle during which intravenous barbiturates were first introduced to control convulsions, and now induced convulsions are in turn advocated to combat apnea resulting from intravenous anesthesia.

The observations to be presented here are not original or even new, but the author holds the view that any potentially lifesaving procedure should be publicized until it is generally known. The object of the paper is to emphasize certain possibilities of use of available electrical equipment in respiratory emergencies, without forgetting the established requirements of anesthetic technique. It is not intended to advocate a particular technique of treatment to the exclusion of proven methods, or to lull the therapist into an illusion of security.

Laryngeal Spasm

A frightening complication of intravenous anesthesia is reflex spasm closing the larynx so as to obstruct respiration. This complication is initiated by aspirated droplets of mucus and progressively aggravated by anoxia. This may be a fatal complication. It can be avoided to some extent by preliminary injection of atropine to reduce secretion of saliva, and by keeping the mouth clear of apparatus that might stimulate salivation. After its incipient development, administration of oxygen may cause relaxation of the spasm, but in the situation of preparedness to administer convulsive electrotherapy it seems to work out best to proceed with the treatment. An electrically induced convulsion, lasting about 30 to 45 seconds, suffices to eliminate the obstruction due to laryngo-spasm. This works by temporarily deepening the anesthesia, a recommended but relatively hazardous method of treating laryngospasm, unless it is preparatory to laryngeal intubation and positive pressure respiration. However the short time consumed in the usual grand mal response to electrical stimulation does not seem to aggravate the situation seriously. The routine use of a relaxant, Flaxedil, may contribute to avoid serious and persistent laryngeal spasm in patients.

Pharyngeal obstruction due to flaccidity and swelling of the tongue is a simple and common source of respiratory difficulty which is too often overlooked or misunderstood. It is potentially fatal, especially if the patient is not adequately observed. However, it is easily remedied by introduction of an artificial self-retaining airway, and can be more simply prevented or relieved by lifting the patient's jaw forward, or having the patient lie in the semiprone position rather than flat on his back, following the treatment.

Apnea

Apnea due to intravenous anesthesia is likely to develop if the barbiturate is injected rapidly. This presents little difficulty if the form of electrical stimulation planned is administered almost immediately on completion of the intravenous injection. Electrical stimulation is usually effective in restoring respiration, whether convulsive or subconvulsive stimulation is used.

Occasionally apnea is prolonged after a convulsive response. It is here that the minimal electro-stimulation first suggested by Robie finds its application. In my own treatments, using controlled alternating current, the electrodes are left in place after convulsive treatment until spontaneous respiratory movements are observed. If apnea persists more than ten seconds after the last clonic movements have subsided, application of a current rising from zero and reaching 25 to 50 milliamperes in a second, then returning to zero, and applied at intervals of five seconds, results in a gentle shudder, followed by a gasp, at each application.

In this electrotherapy, the current is applied bitemporally, simply because the electrodes are already at the temples. However, Robie's technique of electro-stimulation for barbiturate poisoning presumes bitemporal placement of electrodes, on the assumption that cortical and diencephalic stimulation is desirable. Meadows reports direct stimulation of the phrenic nerves by electrodes placed on the neck. Recently Blachly and Brookhart reported successful treatment of a case of barbiturate coma with electrodes placed on the medial parts of the legs. These investigators suggest that even when the current is applied bitemporally respiration is stimulated reflexly by way of the trigeminal nerves. Under experimental conditions, with the sensory part of the trigeminal nerves sectioned, they found bitemporal stimulation to be ineffective in counteracting apnea induced by barbiturate, while stimulation of the temporal regions in the decerebrate preparation results in respiratory responses. Blachly and Brookhart suggest that neither the placement or electrodes nor the pattern of stimulating current is specific in the therapy of barbiturate poisoning.

Summary

Convulsive and subconvulsive electrotherapy is of some value in dealing with the respiratory complications of intravenous anesthesia.

Laryngospasm or apnea following an intravenous barbiturate can be relieved by an induced grand mal seizure.

Apnea occurring after a grand mal seizure can be abbreviated by intermittent subconvulsive stimulation.

A clear airway is of prime importance whenever respiration is to be assisted.

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Book Reviews

CURRENT THERAPY: Edited by Howard F. Conn, M.D., and other Consulting Editors. Cloth. $11.00. Pp. 632. W. B. Saunders Company, West Washington Square, Philadelphia, Penna. 1956.

As I have stated in my reviews of the previous (1954-1955) editions of the book, the usefulness of this refresher-reference work could be materially improved were there presented a summarized statement of each conditions or disease for which the coincident therapy is outlined. Since selection of treatment procedure should be predicated upon an accurate recognition of the underlying condition, the suggested concise resumé of the cardinal diagnostic features of each clinical entity for which therapy is offered, would make both for greater usefulness and more coordinate therapeutic relation between the medical contributor as consultant and the medical attendant.

While a number of medical conditions have been added to the 1956 revision of the book, such clinical entities as Simmond's disease, Dengue fever, and Fröhlich's Syndrome remain deleted from this issue.

The roster of pharmaceuticals which continues to remain incomplete, could have been made more useful by greater inclusion of absentee drugs.

Considerable page space has once again been given over to minute cataloguing of proprietary drugs of certain manufacturers (even as to description of flavoring, containers, and mode of packaging), whereas other of the included remedies have received but bare mention. The volume could also have been made further useful if each pharmaceutical named in the Roster of Drugs section were to carry page reference to the medical condition in the text whereat the medication is suggested.

Whether the handiness of the present volume warrants it, in view of the foregoing suggestions for future revisions, it should be noted that the 1956 edition contains 60 pages less than did its 1955 predecessor.

The scope and format of the book continues to reflect the most recent advances in treatment of the clinical entities considered therein, the contributors are representative of the country's outstanding clinicians in their respective fields, and the volume affords an abundant storehouse of practical therapeutic methodology gleaned from sources eminently authoritative.

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IMPARTIAL MEDICAL TESTIMONY: A Report by a Special Committee of The Association of the Bar of the City of New York. Cloth. $3.95. Pp. 188. The Macmillan Company, 60 Fifth Avenue, New York, N. Y., 1956.

The book embodies a report by the Special Committee of the New York City Bar Association on the function of the New York Medical Expert Testimony Project which was set up and carried on for an experimental two-year period from December 1952 to December 1954, within the jurisdiction of the First Judicial Department which comprises New York and Bronx Counties of the City of New York.

The scope of the experiment is aimed at medico-legal collaboration for the better administration of justice and designed as a test project toward remedying the deficiencies and abuses encountered in the presentation of medical evidence in judicial proceedings.

The report indicates that through the joint action of local medical societies and bar associations and sparked by two private financial grants, the selection of designated physicians to serve on panels in the various specialties of medicine was assigned to a joint committee of the New York Academy of Medicine and the New York County Medical Society. This group originally chose only physicians from New York County for these panel lists; and the report further indicates that selection "must depend upon" physicians who are "senior men . . . in a medical school or . . . in . . . approved hospitals. Younger physicians who may be scientifically well trained will not have the same weight . . . before a jury . . . It is the belief of . . . (the medical) . . . consultant that such a system must be held inviolate if this panel is to be recognized . . ." When the system was extended to Bronx County in October 1953 the promulgation of panels of designated doctors was assigned to the local medical society in that County; and none was chosen unless he was also a dues-paying member in the said society. Where the question of exclusive decision as to professional skill and competence is vested solely in an organization which makes membership therein an obligatory prerequisite, such closed circuit selection for specialist panel listing is manifestly monopolistic and suggestive of the undemocratic line where to be chosen for competence appears secondary to participation as a joiner.

In respect of results reflected, the report suggests that in the background of every settlement discussion between opposing attorneys in personal

injury litigation, there is now implemented the possibility that if one side persists in unreasonable and unlikely medical claims, the case will be referred to a panel doctor; and he may destroy the spurious claim entirely. While the report goes on to suggest that no estimation is possible as to how many cases have been disposed of because of such considerations and apprehensions, the report however points up to the high probability that the very existence of the project tends to deter doctors and lawyers from consciously exaggerating or falsifying medical claims under pain of confrontation by a highly skilled specialist. Another projected beneficial effect refers to the influence exerted by the medical expert testimony project on improving diagnosis, adverts to the revelation of the professional weaknesses of some users of radiographic and other diagnostic devices and techniques, and calls attention to the fact that such knowledgeable deficiencies will thus be corrected by doctors in future cases. The reader of the report is then reminded "that the Project will not only help in informing judges and juries of what doctors know . . . but will go one step further and help the doctors themselves in discovering the truth . . ."

In the opinion of the Committee on the Project a number of accomplishments, which the report discusses in some detail, have been brought about by the plan. Among the achievements cited in support of a more active and widespread interest in the plan are the improvement in the process of finding medical facts in litigated cases, the relief of some court congestion, wholesome prophylactic effect upon presentation of medical testimony, and the way to better diagnosis in traumatic medicine.

The report optimistically suggests that the usefulness of the Project as a precedent is not limited and may be extended to other places and other courts on a state-wide basis in New York as well as to communities elsewhere. To quote from the report: "Designating a panel of experts as was done in New York . . . (i.e. via exclusive choice through the local medical society wherein its panel candidate is a member) . . . is not an absolute essential and might not be practical in a small community. The only thing essential is that proper men be picked by a system which ensures both absolute impartiality and high competency." With this I am in entire accord and further suggest with emphasis that no professionally well qualified impartial medical expert should be shut out of the panel of his specialty merely because, as the report seems to suggest, he is not venerably impressive by reason of unantique appearance; or because he may not happen to be a dues-paying member in the particular local medical society clothed with the privilege of choosing. Impartial medical testimony justifies with equal dignity the impartial designation of the qualified impartial expert regardless of his physiognomic appearance or his organizational relationship.

While the report reflects a forward step and deep concern in respect of the problems inherent in the practice of presentation of medical evidence in litigated personal injury cases and the securing of dependable medical testimony, it also points out that the usefulness of the medical expert testimony plan may well be extended to contract, malpractice, probate and other types of litigation where the physical or mental condition of the litigants may be in issue.

With due regard for the Special Committee's report that the experiment has proven an effective way of dealing with disputed medical aspects and facilitates the better administration of justice, the following significant passage therefrom merits serious contemplation where the scope of impartial medical testimony is projected: "A few judges and lawyers have been disturbed by the special status occupied by an impartial expert. They feel that his importance is overemphasized, that his word is too likely to be treated as gospel when it should not be, and that he may usurp the functions of judge and jury. Medicine, they argue, is not an exact science like mathematics. There are vast areas of medical ignorance. The opinion of a famous doctor is not necessarily better than that of an obscure one. Designation of a doctor as an impartial specialist by a court does not improve the quality of an opinion. Because of this feeling there has even been some doubt as to whether the impartial expert's true position in the litigation—the fact that he was appointed and summoned to appear as a witness by the court and that his compensation comes from the court—should be revealed to the jury."

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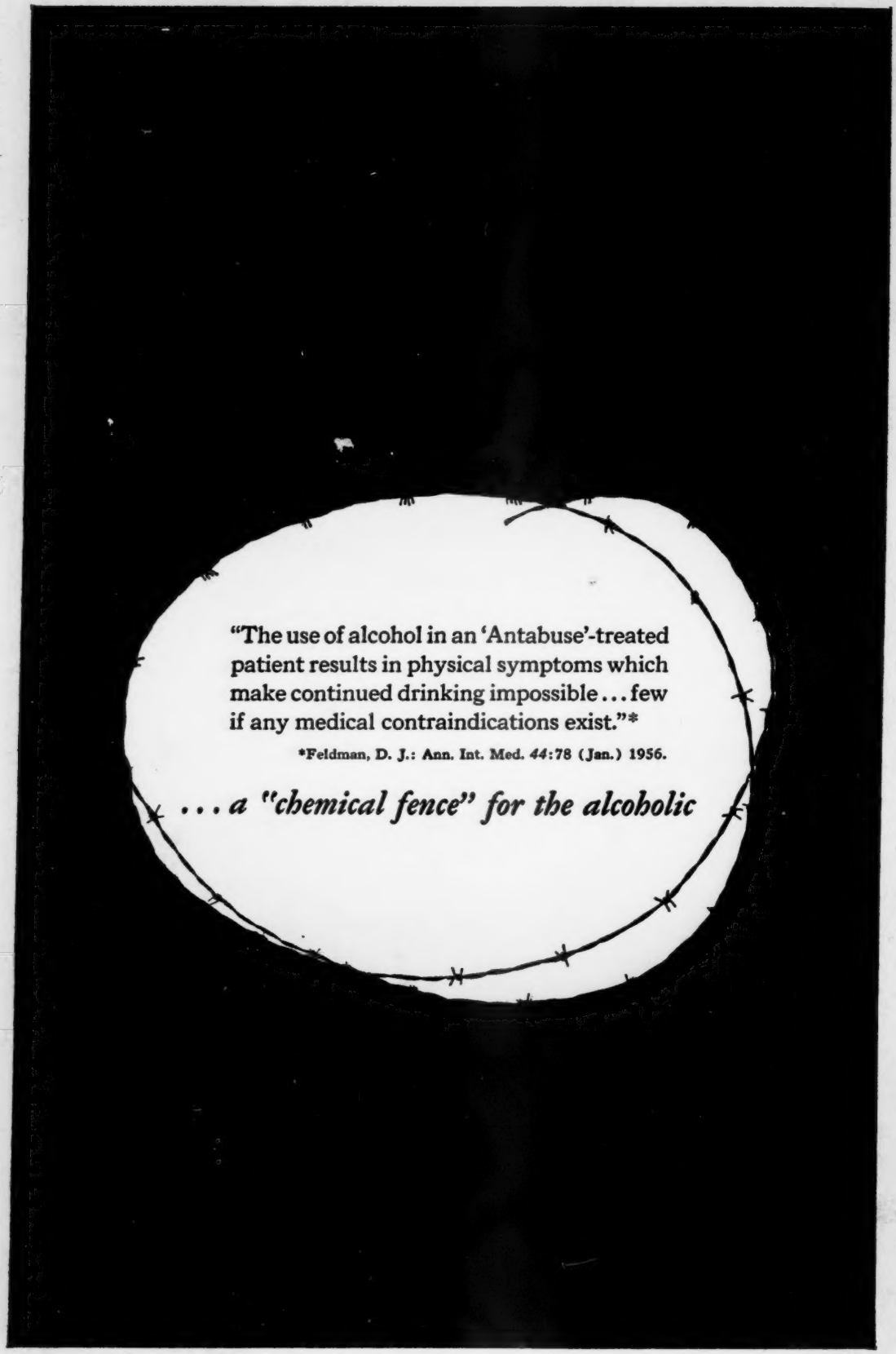
"The use of alcohol in an 'Antabuse'-treated patient results in physical symptoms which make continued drinking impossible . . . few if any medical contraindications exist."*
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